Attorney Docket # 4452-592RCE Patent

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of
Hubert BECK
Serial No.: 10/779,290
Filed: February 13, 2004
For: Bellows For Hydraulic, Hydropneumatic, or Pneumatic Piston-Cylinder Units

Examiner: Graham, Matthew C.
Group Art: 3683

Mail Stop **Appeal Brief - Patents**
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

APPEAL BRIEF

SIR:

This is an appeal, pursuant to 37 C.F.R. § 41.37 from the decision of the Examiner in the above-identified application, as set forth in the Final Office Action wherein the Examiner finally rejected appellant's claims. The rejected claims are reproduced in the Appendix A attached hereto. A Notice of Appeal was filed on July 14, 2008 with a Request for Pre-Appeal Brief Review and a Panel Decision was issued on August 25, 2008.

The fee of $510.00 for filing an Appeal Brief pursuant to 37 C.F.R. § 41.20 is submitted herewith. Any additional fees or charges in connection with this application may be charged to our Patent and Trademark Office Deposit Account No. 03-2412.

REAL PARTY IN INTEREST

The assignee, ZF Sachs AG, of applicant, Hubert BECK, is the real party of interest in the above-identified U.S. Patent Application.

RELATED APPEALS AND INTERFERENCES

There are no other appeals and/or interferences related to the above-identified application at the present time.

STATUS OF CLAIMS

Claims 2, 3, and 8 have been cancelled during prosecution. Claims 1, 4, 5, 9, 10, 11, and 12 have been amended during prosecution. Claims 1, 4-7, and 9-12 have been rejected. Claims 1, 4-7 and 9-12 are on appeal.

STATUS OF AMENDMENTS

There have been no Amendments filed subsequent to the Final Office Action.

SUMMARY OF THE CLAIMED SUBJECT MATTER

Appellant's invention is directed to a piston-cylinder unit (1) comprising a cylinder (14), a piston rod (2) having a section projecting out of said cylinder, said section having an end arranged distal from said cylinder (see Fig. 1; and page 7, lines 2-5, of the application as originally filed), said end being threadably received through a through-hole defined in a mounting bearing (3) forming a threaded joint (4) connecting the piston-cylinder unit to a

support (see page 7, lines 15-16) and such that said end projects out of a distal side of said bearing (3) relative to said cylinder (see page 7, lines 7-9), and a bellows (8) covering said section of said piston rod for protecting said section of said piston rod against at least one of dirt and damage (see Fig. 1; and page 7, lines 5-7), wherein an unimpeded flow connection (5) is provided in the end of said piston rod (page 7, lines 7-9), said flow connection (5) comprising a transverse bore (6) leading to the interior space (7) of said bellows (8) and a longitudinal bore (5a) proceeding from said transverse bore (6) and opening outside of said bearing (3) on said distal side of said bearing (3) (see Fig. 1 and page 7, lines 7-11), said flow connection (5) being permanently open and communicating freely only with an interior space (7) defined in said bellows (8) and with the atmosphere such that said flow connection (5) allows a free flow of air between the atmosphere and said interior space (7) when said interior space in said bellows undergoes a change in volume in response to a relative movement between the bearing (3) and the cylinder (14) (see Fig. 1 and page 7, lines 11-14).

The cylinder (14) comprises a lower attachment part (10) formed with a circumferential groove (undercut area 11), said bellows (8) having a bead which engages said groove (see Fig. 3; and page 8, lines 4-7 -- this portion of the specification (paragraph [0014]) was amended during prosecution in the amendment filed March 11, 2005).

The bellows (8) comprises a collar (radial extension 12) surrounding said bead and which extends radially from said bead, said collar (12) having a radially outer edge portion that is loaded axially against the cylinder (14) (see Fig. 3; page 8, lines 9-14).

GROUNDS OF REJECTION TO BE REVIEWED IN APPEAL

Whether claims 11 and 12 are patentable under 35 U.S.C. §103 over U.S. Patent No. 3,954,257 (Keijzer) and U.S. Patent No. 2,458,157 (Funkhouser) in view of U.S. Patent No. 5,267,725 (Wode)? (see item 3. on page 3 of the final Office Action).

ARGUMENT

DEPENDENT CLAIM 11

Dependent claim 11 recites, "the cylinder comprises a lower attachment part formed with a circumferential groove, said bellows having a bead which engages said groove".

The Examiner concedes that Keijzer and Funkhouser fail to teach or suggest the subject matter recited in claim 11. However, the Examiner cites Wode as teaching a bead engaging a groove.

Applicants submit that the Examiner has misinterpreted Wode because Wode expressly states that element 1 is an end section of a beadless sleeve-type flexible member.

Wode discloses an air spring with a sleeve-type flexible member made of elastomeric material and includes end sections connected to connecting parts by radially plastically deformed clamping rings. According to Wode, an end section 1 of a beadless sleeve-type flexible member 2 is pushed onto a step 5, which is on an end of a cylindrical projection 3 (i.e., a roll-off piston 4) (see col. 2, lines 55-63 of Wode). A circular slot 6 is disposed below the end of the step 5 on the cylindrical projection 3 in which a projection 7 of a radially plastically deformed clamping ring 8 is received (see col. 2, lines 64-69 of Wode). An upper end of the cylindrical projection 3 includes a holding rib 9, and the clamping ring 8 includes another holding rib 11 which is disposed opposite the holding rib 9 (see col. 3, lines 3-14 of Wode).

In other words, the end section 1 of flexible member 2 of Wode, which does not include a bead, is sandwiched (or crimped, pinched) between the holding rib 9 and the holding rib 11. Accordingly, the rectangular cross-section of the end section 1 of the flexible member 2, which is referred to by the Examiner in the Advisory Action, is formed by the ribs 9, 11 on the inner and outer sides of flexible sleeve 2. There is nothing at the end 1 of the flexible member 2 of Wode that could be considered to be a bead. Further, there is no groove in the cylindrical projection 3 for the flexible member 2 to engage. The circular slot 7 receives the circular projection of the clamping ring 8, and not the flexible member 2.

In contrast to Wode, Applicants' claim 11 recites a structure, i.e., a bead, that has the advantage of enabling the bellows 8 to be coupled to the cylinder 14 without the need for an additional clamping ring, as is required with the configuration of Wode.

Because Wode expressly states that sleeve-type flexible member 2 is beadless, Wode fails to teach or suggest "the cylinder comprises a lower attachment part formed with a circumferential groove, said bellows having a bead which engages said groove", as recited in claim 11. Accordingly, claim 11 is allowable over the combined teachings of Keijzer, Funkhouser, and Wode.

Dependent claim 12

Dependent claim 12, which depends from claim 11, further recites, "the bellows comprises a collar surrounding said bead and which extends radially from said bead, said collar having a radially outer edge portion that is loaded axially against the cylinder".

The Examiner concedes that Keijzer and Funkhouser fail to teach or suggest the subject matter recited in claim 12. However, the Examiner cites Wode as teaching a collar 7, 8 surrounding a bead, which extends radially from the bead (i.e., circular projection 7), and which has a radially outer edge portion (i.e., clamping ring 8) that is loaded axially against the cylinder of Keijzer.

Applicants submit that the Examiner has misinterpreted Wode because Wode expressly states that the element 7, 8 is a radially plastically deformed clamping ring that is not axially loaded against a cylinder.

Wode specifically describes clamping ring 8 as being radially plastically deformed. There is no teaching or suggestion that the element 7, 8 has a collar with "a radially outer edge portion that is loaded axially against the cylinder" (see col. 2, lines 66-68 of Wode). In other words, when the flexible member 2 is inserted between the holding rib 8 and the holding rib 11, the holding rib 8 applies a radially directed holding force against the flexible member 2. There is no axial loading (force) against the piston 4.

Furthermore, even assuming *arguendo* that the end 1 of the flexible member 2 of Wode can be considered to be a bead (which Applicant does not believe to be correct), the element 7 of Wode, which the Examiner considers to be the claimed collar, can not be considered to extend radially from the bead. Rather, the projection 7 of Wode extends radially in an area below the end 1 of the flexible member 2.

Since the clamping ring 8 of Wode is not axially loaded against the cylinder and since the section 7 of Wode does not extend radially from the end 1 of the flexible member 2, Wode fails to teach or suggest "the bellows comprises a collar surrounding said bead and which

extends radially from said bead, said collar having a radially outer edge portion that is loaded axially against the cylinder", as expressly recited in dependent claim 12. Accordingly, claim 12 is allowable over the combination of Keijzer, Funkhouser, and Wode.

For the foregoing reasons, it is respectfully submitted that the combined teachings of fail to establish a *prima facie* case of obviousness with regard to the subject matter recited in claims 11 and 12. The Final Rejection of claims 11 and 12 should be reversed.

CONCLUSION

For the foregoing reasons, it is respectfully submitted that appellant's claims 11 and 12 are not rendered obvious by and are, therefore, patentable over the art of record, and the Examiner's rejections should be reversed.

Respectfully submitted,
COHEN PONTANI LIEBERMAN & PAVANE LLP

By /Alfred W. Froebrich/
Alfred W. Froebrich
Reg. No. 38,887
551 Fifth Avenue, Suite 1210
New York, New York 10176
(212) 687-2770

Dated: September 24, 2008

CLAIMS APPENDIX

1. (previously presented) A piston-cylinder unit comprising a cylinder, a piston rod having a section projecting out of said cylinder, said section having an end arranged distal from said cylinder, said end being threadably received through a through-hole defined in a mounting bearing forming a threaded joint connecting the piston-cylinder unit to a support and such that said end projects out of a distal side of said bearing relative to said cylinder, and a bellows covering said section of said piston rod for protecting said section of said piston rod against at least one of dirt and damage, wherein an unimpeded flow connection is provided in the end of said piston rod, said flow connection comprising a transverse bore leading to the interior space of said bellows and a longitudinal bore proceeding from said transverse bore and opening outside of said bearing on said distal side of said bearing, said flow connection being permanently open and communicating freely only with an interior space defined in said bellows and with the atmosphere such that said flow connection allows a free flow of air between the atmosphere and said interior space when said interior space in said bellows undergoes a change in volume in response to a relative movement between the bearing and the cylinder.

2.-3. (canceled)

4. (previously presented) The piston cylinder unit of claim 1, further comprising an upper attachment part fixed to said bearing, said upper attachment part having a circumferential groove, said bellow having a bead which engages said groove.

5. (previously presented) The piston-cylinder unit of claim 4, wherein said upper attachment part is formed as one piece with said bearing.

6. (original) The piston-cylinder unit of claim 1, wherein said piston-cylinder unit is one of a hydraulic, hydropneumatic, or pneumatic piston-cylinder unit.

7. (original) The piston cylinder unit of claim 1, wherein said piston-cylinder unit is one of a vibration damper and a MacPherson strut for a motor vehicle.

8. (canceled)

9. (previously presented) The piston-cylinder unit of claim 1 wherein the bellows provides the only protection for the piston rod.

10. (previously presented) The piston-cylinder unit of claim 1 wherein the bellows is provided with a weep hole.

11. (previously presented) The piston-cylinder unit of claim 1 wherein the cylinder comprises a lower attachment part formed with a circumferential groove, said bellows having a bead which engages said groove.

12. (previously presented) The piston-cylinder of claim 11 wherein the bellows comprises a collar surrounding said bead and which extends radially from said bead, said collar having a radially outer edge portion that is loaded axially against the cylinder.

EVIDENCE APPENDIX

None

RELATED PROCEEDINGS APPENDIX

None